April 2022 *Monthly Newsletter* Vol 3 Issue 10

COMPUTER SCIENCE in ARKANSAS

FIVE TEACHERS NAMED 2022 COMPUTER SCIENCE EDUCATOR OF THE YEAR FINALISTS

The Arkansas Department of Education's Office of Computer Science announced the five educators selected as finalists for the fourth annual Arkansas Computer Science Educator of the Year award.

"This year the ADE Office of Computer Science, with its team of statewide computer science specialists, reviewed the applications of many of the best teachers in Arkansas," said Anthony Owen, the state director of Computer Science Education. "While there were several outstanding applicants, the committee unanimously agreed that these five educators best demonstrate a long-term and ongoing commitment to, passion for, and impact on computer science education in Arkansas and the nation. Congratulations to this year's finalists!"

The five finalists are:

- Brenda Qualls, Bryant High School
- Carl Frank, Arkansas School for Mathematics, Sciences, and the Arts
- Kimberly Raup, Conway High School
- Nicholas Seward, Arkansas School for Mathematics, Sciences, and the Arts
- Phillip Blake, eStem Public Charter Schools

Each of the finalists will receive a $2,500 award from the Arkansas Department of Education's Office of Computer Science.

A panel composed of representatives from the ADE Computer Science Initiative Unit and external computer science and computing education and industry leaders will review the finalists' applications and select the 2022 Computer Science Educator of the Year based on a rubric scoring system.

The winner, who will be announced at a later date, will receive an additional $12,500 award.

For more information, please see ADE Commissioner's Memo COM-22-087 at https://adecm.ade.arkansas.gov/ViewApprovedMemo.aspx?Id=5000.

WINNERS OF THE GOVERNOR'S SIXTH ANNUAL ALL-REGION CODING COMPETITION

Governor Asa Hutchinson and the Arkansas Department of Education announced the teams advancing to the Sixth Annual All-State Coding Competition scheduled for April 30, 2022.

"Congratulations to the 17 teams that qualified for the Sixth Annual All-State Coding Competition," Gov. Asa Hutchinson said. "Though this will be the last year that I am governor for this competition, I am proud that our state has established this as a valuable tradition for students, sponsors, and schools that has grown each year in participation and that I hope will continue into the next administration. I am extremely impressed with the talent level of the student participants, and I look forward to meeting the 17 All-State teams in person on April 30."

The following teams have been selected to advance to the All-State Coding Competition:

- Arkansas High School in Texarkana - Brodie Gholson, Matthew Hughes, and Joshua Sharpe sponsored by Therron Telford
- Arkansas School for the Mathematics, Sciences, and the Arts - David Clark, Joshua Stallings, and Robert Boerwinkle sponsored by Nicholas Seward
- Bentonville High School - Caleb Jones, Sarah Palmer, and Kate Pearce sponsored by Maud King
- Bentonville West High School - Karina Batra and Ryder Johnson sponsored by Nate Vogel
- Cabot High School - Christopher Sayers and Tyler Baugus sponsored by Michael Calvert
- Conway High School - Ellie Feng, Arnav Karekar, and Evan Tan sponsored by Kimberly Raup
- Don Tyson School of Innovation in Springdale - Lucas Kellar, Dylan Crawford, and Eli Wetzel sponsored by Jessica Mabie
- Fayetteville High School - Keming Meng and Taksh Patel sponsored by Emery Faulkner
- Haas Hall Academy in Fayetteville - June Simmons, Grace Harding, and Britton Adair sponsored by Margaret Cotton
- Haas Hall Academy in Rogers - Austin Parker, Ivan Freeman, and Winston Bounsavy sponsored by Amy Schwartz
- Har-Ber High School in Springdale - Matthew Crecelius, Nicholas Byrd, and William Cherry sponsored by Tiffany Abner
- Hot Springs World Class High School - Josiah Rubio, Jin Gamada, and Jude Phillips sponsored by Vince Mathews
- Lisa Academy West High School in Little Rock - Harlem Taylor, Harith Hayyawi, and Hayati Sahin sponsored by Clarissa Harpool
- Little Rock Central High School - Ethan Dunn, Aiden Jones, and Brent Orlina sponsored by Stephany Alhajjaj and Kimberly Mayberry
- Mountain Home High School - Darren Blount, Emmanuel Westra, and Dallin Stephens sponsored by J. R. Bergenstock
- Rogers High School - Adrian Salazar, Nicholas Robinson, and Matthew Wilkinson sponsored by Jeff Anderson
- Star City High School - Reid Dutton, Tony Chen, and James West sponsored by Amy Dreher

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Each member of the first-place team will receive a $2,000 award that will be deposited into a 529 College Savings Plan. Each member of the second-place team will receive a $1,000 award deposited into a 529 College Savings Plan, with each member of the third-place team receiving a $500 award deposited into a 529 College Savings Plan. In addition, the schools that register/sponsor the first-place, second-place, and third-place teams will receive $10,000, $6,000, and $4,000, respectively, to support their computer science programs. The prizes and competition expenses are provided by a grant from ARCodeKids.

Article continues on next page.

WINNERS OF THE GOVERNOR'S SIXTH ANNUAL ALL-REGION CODING COMPETITION CONT.

The All-Region Coding Competition was a digital event that took place on Feb. 25, 2022.

More than 150 teams participated in the regional event and were scored by the ADE Office of Computer Science team using a common rubric and process. That process determined the top 16 teams to be invited to participate in the state level event. The school that produced the first-place team at the state competition in 2021, the Don Tyson School of Innovation in Springdale, which also was the winner in 2020, received an automatic invitation to send a team to the state competition.

The All-State Coding Competition will be held on Saturday, April 30, 2022.

LearningBlade® CORNER

Learning Blade On-Demand User Group Launched

Learning Blade is happy to announce that our On-Demand User Group video library is now live and accessible for all educators! Check out these short videos at your leisure on key Learning Blade-related topics such as encouraging Girls and Minorities in STEM, STEM Education in Rural Schools, STEM Workforce, Computer Science, Afterschool and many more!

Hear from your own Anthony Owen, State Computer Science Director for the Arkansas Department of Education and many others!

LearningBlade® USER GROUP

On-Demand User Group Link: https://www.learningblade.com/usergroup

Nominations are now open for the Learning Blade Educator of the Year

A reminder that self-nominations are welcome.

The Learning Blade Educator of the Year will be awarded $1,500 and be invited to participate in Learning Blade regional and national webinars and/or events. Four Semi-Finalists will each receive $250.

Applications are due by Saturday, April 30, 2022!

Link: https://www.surveymonkey.com/r/LBEOTY

If you have not signed up for your free account, please do so at www.LearningBlade.com/AR.

2022 COMPUTER SCIENCE AND COMPUTING EDUCATOR ACADEMY

The Arkansas Department of Education (ADE) Office of Computer Science announced its planned expansion of the Computer Science and Computing Educator Academy (CSCEA).

The CSCEA, which began in the summer of 2021, is expanding for the summer of 2022 and will provide another option for Arkansas residents to:

- Learn basic computer science, which provides a starting point for new teachers to be successful
- Receive preparation for passing the Computer Science Content Knowledge Praxis exam
- Gain approval to teach high school computer science courses
- Earn up to 18 postsecondary graduate-level credits in computer science
- Expand skills in specialized areas aligned to state adopted programs of study

For the summer of 2022, ADE has selected both the University of Arkansas at Little Rock (UA Little Rock) and Arkansas Tech University (ATU) in Russellville as public university partners. ATU was the university partner in the summer of 2021 and will continue to support this work in an expanded role of certifying teachers through a traditional programming and computing pathway.

UA Little Rock was selected as a second public university partner to help expand the number of certified teachers using a cybersecurity focus. Up to 60 participants for each public university partner will be able to choose their preferred host institution.

The primary 90 hours of training is provided by the ADE Office of Computer Science and consists of 60 hours of content that is designed, and required, for all candidates who have not yet passed the Computer Science Content Knowledge Praxis exam, and 30 hours of advanced level training that varies based on the participant's interests and needs. Participants may receive 6 hours of graduate-level credits upon successful completion of the primary 90 hours.

New participants, who fully complete the initial 90 hours of training and are awarded the associated 6 hours of graduate-level computer science credit, will be eligible to have tuition and fees covered for up to 12 additional graduate hours of computer science or related credits at their selected public university partner (either ATU or UA Little Rock).

Participants from the summer 2021 cohort will be invited to complete an additional 12 graduate hours of computer science or related credits at ATU beginning this summer.

Only coursework and courses completed by December 31, 2023, will be eligible to be paid for by this program.

Article continues on next page.

2022 COMPUTER SCIENCE AND COMPUTING EDUCATOR ACADEMY CONT.

For the summer 2022 cohort, the CSCEA is restricted to Arkansas residents who are either employed by an Arkansas public school district or intend to teach within an Arkansas public school district and have a letter of support from a Superintendent of an Arkansas Public School District.

Candidate selection may be prioritized based on regional needs, and for districts that are classified as high-poverty.

Interested candidates should read all of the information found on Commissioner's Memo COM-22-032 https://adecm.ade.arkansas.gov/ViewApprovedMemo.aspx?Id=4878.

An overview document about the ATU and UA Little Rock programs will provide information on the difference between the two university partners' plans for participants, can be found at https://csforar.info/22CSCEAPUPInfo.

Interested participants have until **11:59p.m. on April 30, 2022**, to apply. Be sure to apply today at https://www.surveymonkey.com/r/CSCEAApp22.

Once approved, applicant information will be forwarded to the point of contact at the assigned public university partner. The institutions will then share information about their graduate school application process and program logistics with assigned participants.

ARKANASAS COMPUTER SCIENCE AND COMPUTING EDUCATOR ACADEMY

COMPUSCHOLAR PD OFFERINGS

This article was originally shared over the ARKidsCanCode listserv by Chris Yust with CompuScholar, Inc. If you would to join our listserv, please visit http://bit.ly/CSforARListserv.

The College Board has endorsed CompuScholar as an approved provider for AP Computer Science A curriculum and Professional Development. Teachers looking for free AP CSA Professional Development that can be done any time, at home (online), at your own pace can register here: https://www.compuscholar.com/schools/outreach/ap-csa-professional-learning/

This 10-hour, self-study PD covers:

- The AP CSA Course and Exam Description (Thinking Practices, Skills, Unit Sequence, Big Ideas)
- Completing the Course Audit and leveraging AP Classroom resources
- CSA Exam format and scoring
- Planning & teaching the course with CompuScholar's Java Programming curriculum

Teachers not using the Java Programming curriculum may still learn from the CSA-centric parts focusing on the CED, required skills, AP Classroom, etc. There is no minimum time commitment or 100% completion requirement. Questions can be directed to Chris Yust at chris.yust@compuscholar.com.

BRINGING DATA SCIENCE TO THE MASSES

This article was written by CS Specialist Mark Barnes.

Data science lies at the intersection of statistics, artificial intelligence, graphic design, and storytelling. It is a truly interdisciplinary field that allows researchers to harness both the creative and analytical portions of their brain to draw conclusions and make predictions based on huge data sets. Due to its interdisciplinary nature and the breadth of data that can be analyzed, it's possible to integrate data science into any subject area and can serve as an excellent introduction to programming for students who may feel intimidated by the idea of writing their own code. The following are some resources and ideas for integrating data science with your current curriculum.

Code-free data exploration

Regardless of your subject area, there is a solid chance that you can find data sets for your students to analyze. Kaggle.com is a popular clearing house for open data sets provided by companies, organizations, and individual users. If you're teaching an English class, you might download the Classic English Literature Corpus dataset so that your students could analyze the frequency and usage of particular words in historical texts. A music teacher, on the other hand, may want to download the MusicNet Dataset so that their students can identify patterns in different genres of music.

Once you have a data set, you can have your students do some exploratory analysis using a simple spreadsheet program like Microsoft Excel or Google Sheets. Most of the datasets hosted on Kaggle are provided in CSV format and can be imported into a spreadsheet quickly and easily. Once in the spreadsheet, students can use data filters to sort and search the dataset, and they can use the built in visualization tools to create graphs to visualize relationships between different data features. None of this requires any written code, and it will give your students some valuable experience working with real-world subject-specific data.

Statistical Analysis

If you're a math teacher covering statistics and probability, you're already familiar with a lot of the vocabulary of data science as well as some of the popular prediction and classifier models that data scientists use. If you want to give your students some experience running statistical models like linear or logistic regression on contemporary, relevant data, you can use tools like Google Colab or Weka to simplify the process. Google Colab is a cloud-based implementation of Python for data scientists that takes advantage of Google's computing resources. You can build a quick linear regression in less than 10 lines of code. If you're less confident in your Python programming expertise, Weka is a GUI-based application that provides you with automated tools for every step of the data science process from data preparation to modeling to visualization. It even comes with several pre-installed datasets to test out. Your students can use these tools to flex their math muscles as they test out different models and see the differences in performance between each.

Story-telling with Data

If you are an English teacher, you likely already know the value of good primary sources when conducting research for an essay, but it can be challenging to get students to seek out primary sources when there is such an abundance of bad to middling quality secondary sources readily available on the Internet. Analyzing public datasets with students and working to form connections can be a great way to teach and reinforce inductive and deductive reasoning. Asking students to communicate their interpretations of datasets can form the basis for an essay or presentation, requiring the students to demonstrate quality research skills, sound reasoning, and thoughtful persuasive writing.

For more information, you can reach out to CS Specialist Mark Barnes at mark.barnes@ade.arkansas.gov.

TSA STATE CONFERENCE 2022

Students from around the state participated in the Arkansas State Technology Student Association (TSA) competition at Camp Couchdale in Hots Springs on March 14, 2022. Students showcased their talents through a multitude of STEM related competitions including Robotics, Cybersecurity Capture the Flag, Dragsters, Drones, Public Speaking, Board Games and many more.

The conference consisted of 41 competitions, and included 267 middle school and high school students from 22 school districts across the state.

Many of the state winners will be competing this summer in the National TSA Conference held at the Gaylord Texan Resort & Convention Center in Dallas, Texas.

STEM EXPO AND CAREER FAIR 2022

On March 15, a couple of our CS Specialists participated in the STEM Expo and Career Fair hosted by the Northcentral Arkansas Education Service Cooperative (NAESC) on the campuses of Ozarka College and NAESC.

The event hosted approximately 1,300 students from grades 6-12. These students represented 16 school districts within the NAESC, and offered a chance for the students to learn about postsecondary and career opportunities that expose students to various STEM pathways they can pursue in Arkansas.

Licensed Part 107 pilot and CS Specialist Jim Furniss showcased drones to attending students and encouraged interested students to pursue their individual license. CS Specialist Alex Moeller discussed various security concepts through lock picking and other cybersecurity activities.

Innovation in Computer Science School Grant Program

Don't miss your opportunity to apply for the Computer Science and Computing Innovation Grant for Arkansas public K-12 schools! Applications close at **11:45 p.m. (CST) on April 30, 2022**.

This opportunity includes up to $250,000 in total reimbursement funding that has been allocated for the purchase of curriculum, software licenses, non-fundamental equipment, professional development, student incentives, and other approved expenses that directly support the instruction of the ADE K-12 Computer Science and Computing Standards.

Be sure to apply now at https://www.surveymonkey.com/r/CSforARInvGrant2022.

Visit https://adecm.ade.arkansas.gov/ViewApprovedMemo.aspx?Id=5003 for more information.

For any questions, reach out to our team at CSforAR@ade.aransas.gov.

CS Completer Cords

ADE Office of Computer Science announced that we will be providing Arkansas seniors with Computer Science Completer graduation cords.

Cords may be requested using the form found at: https://csforar.info/CompleterCords.

Please note, only school counselors/registrars may request these cords for students enrolled in public or private schools. Parents of homeschooled students may request a cord for their child.

When you receive your cord, be sure to share it with us using the hashtag #CSMissionComplete so we can follow all the #CSforAR Completers!

UPCOMING TRAINING

bit.ly/CSforARPD

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